IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/334,137
Applicant: MURDIN, Andrew D. et al.
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TC/A.U.: 1645
Examiner: Nita M. Minnifield

Docket No: 032931/0261

Commissioner for Patents
P.O. Box 1450
Washington, D.C. 20231

DECLARATION PURSUANT TO 37 CFR § 1.132

I, Andrew Murdin, Director, External R&D Canada, Aventis Pasteur, hereby declare that:

1. Details of my employment history are as follows:

   Since 2002 Director, External R&D Canada, Aventis Pasteur.

   1999 - 2002 Principal Research Scientist, Aventis Pasteur.

   1997 - 2002 Section Head, Aventis Pasteur

   1993 - 2003 Project Leader (Chlamydia), Aventis Pasteur

   1990 – 1993 Research Scientist, Connaught Laboratories Ltd. (subsequently Pasteur Merieux Connaught, subsequently Aventis Pasteur), Toronto, Canada

   1988 to 1990 - Post-Doctoral Research Associate, Dept. of Microbiology, State University of New York, Stony Brook, NY, USA.

   1985 to 1987 - Post-Doctoral Research Fellow, Dept. of Microbiology, University of Surrey, Guildford, Surrey, England.

   1981 to 1985 - Scientific Officer, Vaccine Research Dept., Animal Virus Research Institute, Pirbright, Surrey, England.

2. Details of my education are as follows:

B.Sc., University of Bath, England, 1980

Ph.D., University of Surrey, England, 1986

3. I have reviewed U.S. patent No. 6,559,294 to Griffais et al. ("Griffais"), which is cited in the Office Action mailed September 11, 2003.

4. Griffais sequenced the *C. pneumoniae* genome and identified 1296 putative open reading frames (see Table 1 of Griffais).

5. Griffais says any of the 1296 open reading frames can be used to make a vaccine. This is incorrect as discussed below.

6. Experiments conducted by the assignee Aventis Pasteur Limited demonstrate that only a few of the 1296 open reading frames can be used as vaccines.

7. Thirty six *C. pneumoniae* open reading frames coding for outer membrane proteins were tested for their ability to protect against *C. pneumoniae* infection in the *in vivo* mouse model. The attached Summary of Protective Results specifies:

- which construct was used for immunization. The constructs were made essentially as described in Examples 1 and 2 of the specification;
- which of Griffais' SEQ ID NOs correspond to the sequences in the construct, and
- whether these sequences confer protection. Testing of the constructs for immuno-protection was performed as described in Example 3 of the specification.

8. The attached Raw Biologic Data show the raw data (bacterial load per lung) in each experiment. The experiments were performed as described in Example 3 of the specification.

9. As is clear from the Summary of Protective Results and the Raw Biologic Data, of the 36 *C. pneumoniae* ORFs tested, only 8 (i.e. 22%) provided a protective effect.

10. These results confirm that Griffais is incorrect in stating that any of the 1296 open reading frames can be used in a vaccine.

11. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

February 11th 2004

Date

Andrew Murdin,

Director, External R&D Canada

RAW BIOLOGIC DATA

Note:
sample dilutions **S1-S7** - 1:50 and 1:100, in duplicate
S8-S57 - 1:50 and 1:100; 1:100 and 1:200

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pCAIMOMP **Genset SEQ ID NO 737**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B, same day)	Immunized with
B1	5	5	20	5	15	5000	8000	6500	2400	2899.42523	na	PBS
B2	5	0	0	2	0	0	800	400				
B3	5	0	1	1	0	200	400	300				
B4	9	14	61	19	32	15000	20400	17700	7800	7052.65907	na	PBS
B5	9	2	11	2	11	2600	5200	3900				
B6	9	2	8	0	4	2000	1600	1800				
D1	5	6	49	5	4	11000	3600	7300	3480	2319.82758	0.3929	DNA CP 001
D2	5	1	8	4	2	1800	2400	2100				MOMP
D3	5	0	10	4	13	2000	6800	4400				
D4	5	4	2	7	6	1200	5200	3200				
D5	5	0	4	0	0	800	0	400				
D6	9	3	2	0	1	1000	400	700	1300	927.36185	1.75	DNA CP 001
D7	9	6	5	0	0	2200	0	1100				MOMP
D8	9	10	2	6	0	2400	2400	2400				
D9	9	0	0	0	0	0	0	0				
D10	9	21	0	1	0	4200	400	2300				

Screen #	S2
Date	

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pCAI314 **Genset SEQ ID NO 291**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B1	5	24	12	12	19	7200	12400	9800	10466.6667	2334.28552	na	saline
B2	5	42	34	15	15	15200	12000	13600				
B3	5	14	22	8	14	7200	8800	8000				
B4	9	47	45	11	25	18400	14400	16400	17066.6667	4677.84378	na	saline
B5	9	18	41	8	21	11800	11600	11700				
B6	9	65	64	31	20	25800	20400	23100				
E1	5	43	5	23	23	9600	18400	14000	9820	5306.37353	0.7857	DNA CP 008
E2	5	24	43	8	2	13400	4000	8700				Incyte 314
E3	5	34	15	24	27	9800	20400	15100				
E4	5	28	53	16	0	15800	6400	11100				
E5	5	1	1	0	0	400	0	200				
E6	9	11	8	5	4	3800	3600	3700	5640	3015.02902	0.7857	DNA CP 008
E7	9	53	22	19	0	15000	7600	11300				Incyte 314
E8	9	9	1	23	3	2000	10400	6200				
E9	9	16	6	6	2	4400	3200	3800				
E10	9	13	5	4	3	3600	2800	3200				

Screen # 3	S3
Date	

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pCAI397 **Genset SEQ ID NO 25**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B1	5	29	34	10	15	12600	10000	11300	40900	33881.2857	na	saline
B2	5	226	193	126	106	83800	92800	88300				
B3	5	61	46	36	26	21400	24800	23100				
B4	9	26	22	18		9600	7200	8400	9366.66667	3777.41828	na	saline
B5	9	5	10	7	12	3000	7600	5300				
B6	9	39	39	17	16	15600	13200	14400				
E1	5	22	254	83	123	55200	82400	68800	44400	13601.9116	0.5714	DNA CP 017
E2	5	12	153	46	99	33000	58000	45500				Incyte 397
E3	5	43	123	34	59	33200	37200	35200				
E4	5	116	99	64	47	43000	44400	43700				
E5	5	23	123	5	66	29200	28400	28800				
E6	9	56	206	55	95	52400	60000	56200	21860	18040.9091	0.3929	DNA CP 017
E7	9	42	84	3	49	25200	20800	23000				Incyte 397
E8	9	6	33	12	14	7800	10400	9100				
E9	9	6	23	8	12	5800	8000	6900				
E10	9	9	68	12	20	15400	12800	14100				
F1	5	26	17	31	10	8600	16400	12500	10660	3161.3921	0.25	rec. CP MOMP
F2	5	32	27	7	11	11800	7200	9500				
F3	5	9	18	5	7	5400	4800	5100				
F4	5	43	23	12	26	13200	15200	14200				
F5	5	22	30	20	14	10400	13600	12000				
F6	9	18	12	14	7	6000	8400	7200	11420	5299.58489	0.7857	rec. CP MOMP
F7	9	9	11	6	6	4000	4800	4400				
F8	9	62	65	10	20	25400	12000	18700				
F9	9	48	27	11	6	15000	6800	10900				
F10	9	43	32	13	29	15000	16800	15900				

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pCAI394 **Genset SEQ ID NO 33/35**
pCAI395 **Genset SEQ ID NO 31/32**
pCAI396 **Genset SEQ ID NO 28**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B, same day)	Immunized with
B1	5	52	39	15	12	18200	10800	14500	21600	17592.2331	na	saline
B2	5	144	102	39	67	49200	42400	45800				
B3	5	12	7	2	11	3800	5200	4500				
B4	9	36	45	28	25	16200	21200	18700	11466.6667	5134.41547	na	saline
B5	9	20	19	8	9	7800	6800	7300				
B6	9	12	28	9	13	8000	8800	8400				
D1	5	102	85	52	43	37400	38000	37700	27060	11345.5895	0.5714	DNA CP 012
D2	5	65	51	28	28	23200	22400	22800				Incyte 394
D3	5	52	45	7	17	19400	9600	14500				
D4	5	26	52	29	18	15600	18800	17200				
D5	5	89	108	75	43	39000	47200	43100				
D6	9	56	26	34	12	16400	18400	17400	9080	5251.81873	1.429	DNA CP 012
D7	9	44	32	13	9	15200	8800	12000				Incyte 394
D8	9	13	6	4	4	3800	3200	3500				
D9	9	17	14	2	1	6200	1200	3700				
D10	9	23	29	11	7	10400	7200	8800				
E1	5	44	42	22	29	17200	20400	18800	21640	15249.7344	0.7857	DNA CP 013
E2	5	45	43	7	13	17600	8000	12800				Incyte 395
E3	5	14	11	8	8	5000	6400	5700				
E4	5	47	55	26	26	20400	20800	20600				
E5	5	122	121	60	70	48600	52000	50300				
E6	9	41	72	44	56	22600	40000	31300	18220	17153.2388	1.214	DNA CP 013
E7	9	1	0	1	1	200	800	500				Incyte 395
E8	9	115	116	58	53	46200	44400	45300				
E9	9	12	13	10	9	5000	7600	6300				
E10	9	16	17	13	9	6600	8800	7700				
F1	5	12	1	5	10	2600	6000	4300	9540	3926.11768	1.75	DNA CP 014
F2	5	34	39	10	20	14600	12000	13300				Incyte 396
F3	5	32	31	11	12	12600	9200	10900				
F4	5	20	5	7	8	5000	6000	5500				
F5	5	41	34	15	16	15000	12400	13700				
F6	9	23	26	18	15	9800	13200	11500	4400	3658.9616	1.75	DNA CP 014
F7	9	8	5	1	6	2600	2800	2700				Incyte 396
F8	9	12	10	3	4	4400	2800	3600				
F9	9	5	5	0	0	2000	0	1000				
F10	9	3	11	4	5	2800	3600	3200				

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pCA9kDa **Genset SEQ ID NO 597**
pCA60kDa **Genset SEQ ID NO 596**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B1	5	0	4	2	5	800	2800	1800	1680	331.058907	na	saline
B2	5	3	3	1	2	1200	1200	1200				
B3	5	5	2	4	3	1400	2800	2100				
B4	5	6	5	3	1	2200	1600	1900				
B5	5	7	3	2	0	2000	800	1400				
B6	9	3	0	1	3	600	1600	1100	4320	4139.75845	na	saline
B7	9	10	1	5	0	2200	2000	2100				
B8	9	33	19	26	10	10400	14400	12400				
B9	9	7	8	8	4	3000	4800	3900				
B10	9	5	8	4	0	2600	1600	2100				
D1	5	10	6	7	4	3200	4400	3800	5000	3739.65239	0.2857	DNA CP 003
D2	5	5	2	3	5	1400	3200	2300				CPCRMP 9 kD
D3	5	21	27	22	11	9600	13200	11400				
D4	5	6	5	2	5	2200	2800	2500				
D5	9	3	6	4	2	1800	2400	2100	1400	913.783344	0.1905	DNA CP 003
D6	9	4	0	0	0	800	0	400				CPCRMP 9 kD
D7	9	3	1	1	0	800	400	600				
D8	9	8	3	3	4	2200	2800	2500				
E1	5	0	0	1	0	0	400	200	525	471.036092	0.03175	DNA CP 004
E2	5	1	0	0	0	200	0	100				CPCRMP 60 kD
E3	5	1	4	0	0	1000	0	500				
E4	5	4	3	3	0	1400	1200	1300				
E5	9	1	0	0	1	200	400	300	125	129.903811	0.01587	DNA CP 004
E6	9	0	0	0	0	0	0	0				CPCRMP 60 kD
E7	9	0	0	0	1	0	400	200				
E8	9	0	0	0	0	0	0	0				

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pCAI111 **Genset SEQ ID NO 314**
pCAI369 **Genset SEQ ID NO 470**

nc = not counted (due to background)
There were problems with background. Therefore counting of inclusions was very difficult.
Only day 9 samples were counted at 1:100 dilution. Where count of 1:100 dilution was low, count of 1:50 dilution was made.

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B6	9	nc	nc	121	183		121600	121600	57380	44196.036	na	saline
B7	9	nc	nc	93	112		82000	82000				
B8	9	13	16	4	3	5800	2800	4300				
B9	9	30	36	9	15	13200	9600	11400				
B10	9	nc	nc	85	84		67600	67600				
D5	9	nc	nc	119	195		125600	125600	99700	16278.5134	0.7302	DNA CP 015
D6	9	nc	nc	94	115		83600	83600				CPN100111
D7	9	nc	nc	121	132		101200	101200				
D8	9	nc	nc	99	122		88400	88400				
F5	9	18	41	4	21	11800	10000	10900	61025	29555.5727	0.9048	DNA CP 031
F6	9	nc	nc	87	101		75200	75200				CPN100639
F7	9	nc	nc	86	91		70800	70800				
F8	9	nc	nc	105	113		87200	87200				

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pCAI877 **Genset SEQ ID NO 15**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B1	5	229	135	143	71	91600	111200	113600	108900	198720	68920.1973	na	saline
B2	5	365	190	170	88	146000	144000	140800	143700				
B3	5	510	353	379	160	204000	292800	256000	261400				
B4	5	719	436	358	148	287600	317600	236800	289900				
B5	5	479	261	262	98	191600	209200	156800	191700				
B6	9	132	69	75	20	52800	57600	32000	50000	137280	132556.228	na	saline
B7	9	151	83	71	27	60400	53600	43200	52700				
B8	9	155	75	84	22	62000	63600	35200	56100				
B9	9	373	113	211	76	149200	129600	121600	132500				
B10	9	1089	425	580	213	435600	402000	340800	395100				
E1	5	463	242	240	132	185200	192800	211200	195500	337950	106397.944	0.7302	DNA CP 036
E2	5	1210	689	509	269	484000	479200	430400	468200				CPN100877
E3	5	830	331	345	157	332000	270400	251200	281000				
E4	5	1041	647	450	209	416400	438800	334400	407100				
E5	9	2448	1323	1590	915	979200	1165200	1464000	1193400	633925	517291.124	0.9048	
E6	9	2758	1435	1379	661	1103200	1125600	1057600	1103000				
E7	9	140	69	66	35	56000	54000	56000	55000				
E8	9	513	237	234	97	205200	188400	155200	184300				

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pCAI628 **Genset SEQ ID NO 500**
pCAI634 **Genset SEQ ID NO 478**
pCAI640 **Genset SEQ ID NO 468**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value(vs grp B, same day)	Immunized with
B1	5	2054	1238	1168	619	821600	962400	990400	934200	685240	255080.862	na	saline
B2	5	1604	844	760	394	641600	641600	630400	638800				
B3	5	452	301	327	140	180800	251200	224000	226800				
B4	5	2082	1182	1083	619	832800	906000	990400	908800				
B5	5	1970	999	872	366	788000	748400	585600	717600				
B6	9	1196	577	563	366	478400	456000	585600	494000	238080	136450.158	na	saline
B7	9	491	203	246	104	196400	179600	168400	180500				
B8	9	704	234	311	165	281600	218000	264000	245400				
B9	9	467	212	241	93	186800	181200	148800	174500				
B10	9	292	134	98	51	116800	92800	81600	96000				
E1	5	1069	605	605	309	427600	484000	494400	472500	568675	322172.806	0.5556	DNA pCAI 628
E2	5	1126	577	633	338	450400	484000	540800	488800				
E3	5	2364	1210	1337	872	945600	1018800	1395200	1094600				
E4	5	534	325	231	133	213600	222400	212800	217800				
E5	9	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	146733.333	6003.51749	0.25	DNA pCAI 628
E6	9	392	197	152	87	156800	139600	139200	143800				
E7	9	381	208	191	93	152400	159600	148800	155100				
E8	9	439	197	148	71	175600	138000	113600	141300				
F1	5	2800	1590	1548	802	1120000	1255200	1283200	1228400	468300	448115.571	0.4127	DNA pCAI 634
F2	5	537	220	270	129	214800	196000	206400	203300				
F3	5	245	107	115	60	98000	88800	96000	92900				
F4	5	650	454	418	273	260000	348800	436800	348600				
F5	9	457	184	155	96	182800	135600	153600	151900	354650	245902.608	1.27	DNA pCAI 634
F6	9	167	76	117	39	66800	77200	62400	70900				
F7	9	1168	605	830	408	467200	574000	652800	567000				
F8	9	1252	732	830	478	500800	624800	764800	628800				
G1	5	393	191	162	83	157200	141200	132800	143100	199775	39538.486	0.03175	DNA pCAI 640
G2	5	592	289	217	111	236800	202400	177600	204800				
G3	5	572	286	177	117	228800	185200	187200	196600				
G4	5	672	333	250	177	268800	233200	283200	254600				
G5	9	1097	507	441	186	438800	379200	297600	373700	373100	50588.388	0.9048	DNA pCAI 640
G6	9	746	422	398	131	298400	328000	209600	291000				
G7	9	1097	507	523	222	438800	412000	355200	404500				
G8	9	1238	591	532	187	495200	449200	299200	423200				

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pCAI115 **Genset SEQ ID NO 305**
pCAI419 **Genset SEQ ID NO 876**
pCAI630 **Genset SEQ ID NO 485**
pCAI632 **Genset SEQ ID NO 480/482**

Note: samples tested at 1:100, 1:200, 1:200 and 1:400 in this screen

** This sample was tested at 1:50, 1:100, 1:100 and 1:200. These dilutions were factored into the calculation for Average IFU/lung for G1.

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:100	Plate A Inclusions per well @ 1:200	Plate B Inclusions per well @ 1:200	Plate B Inclusions per well @ 1:400	Average IFU per lung @ 1:100	Average IFU per lung @1:200	Average IFU per lung @ 1:400	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B, same day)	Immunized with
B1	5	381	216	176	144	304800	313600	460800	348200	429800	239600.267	na	saline
B2	5	238	105	122	80	190400	181600	256000	202400				
B3	5	480	278	242	148	384000	416000	473600	422400				
B4	5	364	180	201	80	291200	304800	256000	289200				
B5	5	1112	563	574	282	889600	909600	838400	886800				
B6	9	81	36	57	19	64800	74400	60800	66600	157080	83783.3969	na	saline
B7	9	387	175	205	74	293600	304000	236800	284600				
B8	9	136	70	110	41	108800	144000	131200	132000				
B9	9	100	30	66	25	80000	76800	80000	78400				
B10	9	257	119	169	69	205600	230400	220800	221800				
D1	5	168	84	94	29	134400	142400	92800	128000	137750	76908.1758	0.03175	DNA pCAI 115
D2	5	342	177	168	70	273600	276000	224000	262400				
D3	5	157	58	73	29	125600	104800	92800	107000				
D4	5	62	40	37	13	49600	61600	41600	53600				
D5	9	331	176	143	63	264800	255200	201600	244200	133550	66781.341	0.9048	DNA pCAI 115
D6	9	96	51	56	17	76800	85600	54400	75600				
D7	9	165	71	82	42	132000	122400	134400	127800				
D8	9	123	62	57	18	98400	95200	57600	86600				
E1	5	298	139	82	51	238400	176800	163200	188800	118100	69372.2567	0.01587	DNA pCAI 419
E2	5	92	48	49	18	73600	77600	57600	71600				
E3	5	266	104	138	41	212800	193600	131200	182800				
E4	5	42	21	21	5	33600	33600	16000	29200				
E5	9	4	2	4	2	3200	4800	6400	4800	63150	42762.6882	0.1111	DNA pCAI 419
E6	9	71	25	37	16	56800	49600	51200	51800				
E7	9	128	72	100	37	102400	137600	118400	124000				
E8	9	80	28	64	24	64000	73600	76800	72000				
F1	5	206	125	126	68	164800	200800	217600	196000	195550	129305.791	0.1111	DNA pCAI 630
F2	5	481	247	278	125	384800	420000	400000	406200				
F3	5	147	49	65	32	117600	91200	102400	100600				
F4	5	109	43	49	26	87200	73600	83200	79400				
F5	9	173	60	57	17	138400	93600	54400	95000	99150	77920.3921	0.4127	DNA pCAI 630
F6	9	304	111	152	76	243200	210400	243200	226800				
F7	9	83	30	39	8	66400	55200	25600	50600				
F8	9	31	10	19	8	24800	23200	25600	24200				
G1**	5	429	275	163	77	171600	175200	123200	161300	124025	33008.5122	0.01587	DNA pCAI 632
G2	5	153	72	65	29	122400	109600	92800	108600				
G3	5	212	128	91	23	169600	175200	73600	148400				
G4	5	87	40	79	16	69600	95200	51200	77800				
G5	9	124	46	33	12	99200	63200	38400	66000	122450	43613.3867	0.5556	DNA pCAI 632
G6	9	274	118	120	48	219200	190400	153600	188400				
G7	9	168	67	74	30	134400	112800	96000	114000				
G8	9	209	65	58	38	167200	98400	121600	121400				

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pCAIMOMP **Genset SEQ ID NO 737**

Important Note:
An error was made in Group B, where the mice were challenged with saline instead with C.p.
In order to calculate Wilcoxon p values, use Group B values from Screen 14, as date of study and IFU values are similar. S14 values are in RED.

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs S14 grp B)	Immunized with
B1	9	0	0	0	0	0	0	0	0	0	0	**Screen 14**	saline
B2	9	0	0	0	0	0	0	0	0			**Ave IFU/lung**	no challenge
B3	9	0	0	0	0	0	0	0	0			**values:**	
B4	9	0	0	0	0	0	0	0	0			63800	
												331600	
												239800	
												15000	
												101800	
D1	9	18	10	6	2	7200	6400	3200	5800	12600	9676.60409	**0.2468**	DNA pCAI MOMP
D2	9	106	38	34	14	42400	28000	22400	30200				
D3	9	37	11	10	5	14800	8400	8000	9900				
D4	9	83	32	16	2	33200	19200	3200	18700				
D5	9	0	0	0	0	0	0	0	0				
D6	9	42	13	15	3	16800	11200	4800	11000				
F1	9	14	8	10	4	5600	7200	6400	6600	3850	2157.73801	**0.1255**	DNA pCAI MOMP
F2	9	15	7	6	3	6000	5200	4800	5300				+ 76kD
F3	9	0	0	0	0	0	0	0	0				
F4	9	13	7	3	0	5200	4000	0	3300				
F5	9	18	7	4	3	7200	4400	4800	5200				
F6	9	13	2	3	1	5200	2000	1600	2700				
G1	9	16	11	3	1	6400	5600	1600	4800	7966.66667	5195.08315	**0.1775**	DNA pCAI MOMP
G2	9	42	24	16	5	16800	16000	8000	14200				+ MOMP ISCOMs
G3	9	16	11	8	1	6400	7600	1600	5800				
G4	9	57	28	11	4	22800	15600	6400	15100				
G5	9	37	8	5	3	14800	5200	4800	7500				
G6	9	2	1	0	0	800	400	0	400				
H1	9	379	168	111	75	151600	111600	120000	123700	62266.6667	31906.7217	**0.6991**	DNA pCAI MOMP
H2	9	148	96	77	34	59200	69200	54400	63000			**vs grp I**	**challenge with**
H3	9	56	22	20	14	22400	16800	22400	19600				**CWL 029**
H4	9	124	79	69	31	49600	59200	49600	54400				
H5	9	132	58	57	16	52800	46000	25600	42600				
H6	9	215	109	93	21	86000	80800	33600	70300				
I1	9	96	49	39	30	38400	35200	48000	39200	56566.6667	20404.7925	na	PBS
I2	9	86	46	37	24	34400	33200	38400	34800				**challenge with**
I3	9	189	83	80	41	75600	65200	65600	67900				**CWL 029**
I4	9	200	111	131	68	80000	96800	108800	95600				
I5	9	116	53	60	37	46400	45200	59200	49000				
I6	9	151	77	66	23	60400	57200	36800	52900				

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pCAI114 **Genset SEQ ID NO 304**
pCAI368 **Genset SEQ ID NO 466**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	3	1	2	2	1200	1200	3200	1700	39625	33263.935	na	saline
B2	9	96	44	43	23	38400	34800	36800	36200				
B3	9	275	124	157	56	110000	112400	89600	106100				
B4	9	91	42	36	22	36400	31200	35200	33500				
B5	9	198	77	88	44	79200	66000	70400	70400				
B6	9	115	60	60	33	46000	48000	52800	48700				
B7	9	0	1	0	1	0	400	1600	600				
B8	9	54	23	17	16	21600	16000	25600	19800				
D1	9	12	6	3	2	4800	3600	3200	3800	30966.6667	34538.9474	0.7548	DNA pCAI 114
D2	9	13	2	5	2	5200	2800	3200	3500				
D3	9	273	121	136	61	109200	102800	97600	103100				
D4	9	101	56	43	25	40400	39600	40000	39900				
D5	9	43	19	12	8	17200	12400	12800	13700				
D6	9	74	27	21	12	29600	19200	19200	21800				
I1	9	42	13	28	13	16800	16400	20800	17600	60016.6667	37360.3808	1.655	DNA pCAI 368
I2	9	304	123	151	63	121600	109600	100800	110400				
I3	9	291	122	141	70	116400	105200	112000	109700				
I4	9	66	31	37	15	26400	27200	24000	26200				
I5	9	119	55	80	44	47600	54000	70400	56500				
I6	9	135	40	45	23	54000	34000	36800	39700				

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pCAI327 **Genset SEQ ID NO 577**
pCAI711 **Genset SEQ ID NO 580**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	65	29	44	21	26000	29200	33600	29500	56237.5	27941.3196	na	PBS
B2	9	214	119	142	66	85600	104400	105600	100000				
B3	9	26	14	20	14	10400	13600	22400	15000				
B4	9	108	54	93	41	43200	58800	65600	56600				
B5	9	151	81	83	31	60400	65600	49600	60300				
B6	9	216	114	NA	NA	86400	91200	NA	88800				
B7	9	60	35	41	23	24000	30400	36800	30400				
B8	9	185	73	87	47	74000	64000	75200	69300				
D1	9	81	37	36	20	32400	29200	32000	30700	16700	8514.88892	0.01265	DNA pCAI 327
D2	9	48	17	14	5	19200	12400	8000	13000				
D3	9	31	13	10	9	12400	9200	14400	11300				
D4	9	9	5	6	2	3600	4400	3200	3900				
D5	9	55	18	34	10	22000	20800	16000	19900				
D6	9	42	28	34	12	16800	24800	19200	21400				
E1	9	125	76	76	31	50000	60800	49600	55300	40700	27821.0951	0.2824	DNA pCAI 711
E2	9	35	21	19	8	14000	16000	12800	14700				
E3	9	82	32	46	20	32800	31200	32000	31800				
E4	9	264	115	121	56	105600	94400	89600	96000				
E5	9	50	26	45	14	20000	28400	22400	24800				
E6	9	66	28	33	7	26400	24400	11200	21600				

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pCAIMOMP **Genset SEQ ID NO 737**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	73	29	42	17	29200	28400	27200	28300	134387.5	142221.222	na	PBS
B2	9	1110	528	689	311	444000	486800	497600	478800				
B3	9	515	234	275	120	206000	203600	192000	201300				
B4	9	338	159	178	81	135200	134800	129600	133600				
B5	9	53	27	37	14	21200	25600	22400	23700				
B6	9	83	51	43	22	33200	37600	35200	35900				
B7	9	236	130	152	72	94400	112800	115200	108800				
B8	9	165	76	81	42	66000	62800	67200	64700				
H1	9	206	78	110	47	82400	75200	75200	77000	34116.6667	25830.2418	0.05927	CP MOMP ISCOMs
H2	9	60	45	45	13	24000	36000	20800	29200				
H3	9	13	3	16	4	5200	7600	6400	6700				
H4	9	162	77	88	28	64800	66000	44800	60400				
H5	9	46	21	26	12	18400	18800	19200	18800				
H6	9	40	11	18	7	16000	11600	11200	12600				

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pCAI624 **Genset SEQ ID NO 503**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	172	75	95	44	68800	68000	70400	68800	76675	37856.7613	na	PBS
B2	9	48	13	18	18	19200	12400	28800	18200				
B3	9	163	77	71	34	65200	59200	54400	59500				
B4	9	93	62	56	22	37200	47200	35200	41700				
B5	9	206	106	116	55	82400	88800	88000	87000				
B6	9	184	91	92	50	73600	73200	80000	75000				
B7	9	301	148	158	69	120400	122400	110400	118900				
B8	9	435	178	180	73	174000	143200	116800	144300				
H1	9	180	101	86	37	72000	74800	59200	70200	134600	72688.9263	0.5728	DNA pCAI 624
H2	9	531	255	256	128	212400	204400	204800	206500				
H3	9	201	97	123	32	80400	88000	51200	76900				
H4	9	627	241	268	113	250800	203600	180800	209700				
H5	9	94	38	61	30	37600	39600	48000	41200				
H6	9	569	237	274	110	227600	204400	176000	203100				

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pCAI473 **Genset SEQ ID NO 1035**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	194	118	109	63	77600	90800	100800	90000	141787.5	129234.762	na	PBS
B2	9	156	86	104	40	62400	76000	64000	69600				
B3	9	298	155	182	98	119200	134800	156800	136400				
B4	9	961	582	618	305	384400	480000	488000	458100				
B5	9	367	179	222	124	146800	160400	198400	166500				
B6	9	145	79	60	18	58000	55600	28800	49500				
B7	9	32	21	11	10	12800	12800	16000	13600				
B8	9	356	216	193	83	142400	163600	132800	150600				
I1	9	83	42	60	19	33200	40800	30400	36300	50333.3333	18202.2587	0.08125	DNA pCAI 473
I2	9	78	66	66	22	31200	52800	35200	43000				
I3	9	159	65	80	33	63600	58000	52800	58100				
I4	9	180	65	90	33	72000	62000	52800	62200				
I5	9	75	28	32	10	30000	24000	16000	23500				
I6	9	215	77	122	44	86000	79600	70400	78900				

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pCA60kDa **Genset SEQ ID NO 596**
pCAIMOMP **Genset SEQ ID NO 737**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	210	140	133	72	84000	109200	115200	104400	74262.5	44432.7283	na	PBS
B2	9	71	30	58	23	28400	35200	36800	33900				
B3	9	195	138	116	70	78000	100800	112000	97900				
B4	9	77	50	54	30	30800	41600	48000	40500				
B5	9	378	225	202	102	151200	170800	183200	164000				
B6	9	154	89	82	34	61600	71200	54400	63200				
B7	9	201	106	76	44	80400	72800	70400	74100				
B8	9	43	26	19	7	17200	18000	11200	16100				
H1	9	12	8	3	4	4800	4400	6400	5000	6883.33333	5473.69974	0.001332	DNA pCA CRMP 60K
H2	9	45	23	24	12	18000	18800	19200	18700				
H3	9	20	10	7	4	8000	6800	6400	7000				
H4	9	32	23	6	7	12800	11600	11200	11800				
H5	9	28	12	11	5	11200	9200	8000	9400				
H6	9	4	2	1	1	1600	1200	1600	1400				
I1	9	55	26	17	12	22000	17200	19200	18900	25650	10914.3254	0.0293	DNA pCA MOMP
I2	9	86	37	40	18	34400	30800	28800	31200				
I3	9	49	27	22	10	19600	19600	16000	18700				
I4	9	38	13	15	5	15200	11200	8000	11400				
I5	9	145	47	50	28	58000	38800	44800	45100				
I6	9	70	42	32	17	28000	29600	27200	28800				

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pCAIMOMP **Genset SEQ ID NO 737**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	135	60	67	36	54000	50800	57600	53300	47525	28892.9382	na	PBS
B2	9	147	80	51	29	58800	52400	46400	52500				
B3	9	142	75	71	33	56800	58400	52800	56600				
B4	9	304	136	141	69	121600	110800	110400	113400				
B5	9	79	49	29	19	31600	31200	30400	31100				
B6	9	61	37	28	11	24400	29600	17600	23500				
B7	9	45	11	15	6	18000	10400	9600	12100				
B8	9	99	59	42	19	39600	40400	30400	37700				
D1	9	23	13	12	8	9200	10000	12800	10500	20550	8151.43137	0.04262	DNA pCAI MOMP
D2	9	37	16	24	14	14800	16000	22400	17300				IN + IM
D3	9	65	31	49	26	26000	32000	41600	32900				
D4	9	41	15	15	9	16400	12000	14400	13700				
D5	9	39	17	27	16	15600	17600	25600	19100				
D6	9	64	24	43	25	25600	26800	40000	29800				
E1	9	11	3	3	1	4400	2400	1600	2700	7266.66667	4585.72665	0.001332	DNA pCAI MOMP
E2	9	33	16	20	7	13200	14400	11200	13300				IM only
E3	9	17	8	14	4	6800	8800	6400	7700				
E4	9	25	16	19	6	10000	14000	9600	11900				
E5	9	20	9	15	2	8000	9600	3200	7600				
E6	9	2	1	0	0	800	400	0	400				
F1	9	34	16	17	7	13600	13200	11200	12800	38083.3333	27897.934	0.5728	DNA pCAI MOMP
F2	9	149	54	69	20	59600	49200	32000	47500				IN only
F3	9	108	35	47	12	43200	32800	19200	32000				
F4	9	2	1	0	1	800	400	1600	800				
F5	9	122	54	60	33	48800	45600	52800	48200				
F6	9	264	101	113	45	105600	85600	72000	87200				
G1	9	47	11	31	12	18800	16800	19200	17900	54283.3333	45978.0896	0.8518	DNA pCAI MOMP
G2	9	57	14	14	7	22800	11200	11200	14100				+ 76 kD
G3	9	56	24	26	12	22400	20000	19200	20400				IN + IM
G4	9	276	100	132	67	110400	92800	107200	100800				
G5	9	118	50	60	14	47200	44000	22400	39400				
G6	9	415	156	194	54	166000	140000	86400	133100				
H1	9	112	58	43	28	44800	40400	44800	42600	25966.6667	12753.3873	0.1812	DNA pCAI MOMP
H2	9	80	46	39	22	32000	34000	35200	33800				+ 76 kD
H3	9	50	22	26	9	20000	19200	14400	18200				IM only
H4	9	42	14	17	12	16800	12400	19200	15200				
H5	9	25	7	13	4	10000	8000	6400	8100				
H6	9	111	41	49	22	44400	36000	35200	37900				
I1	9	54	30	28	18	21600	23200	28800	24200	70166.6667	33338.0997	1.427	DNA pCAI MOMP
I2	9	112	58	44	24	44800	40800	38400	41200				+ 76 kD
I3	9	277	122	137	51	110800	103600	81600	99900				IN only
I4	9	326	152	158	71	130400	124000	113600	123000				
I5	9	170	87	94	39	68000	72400	62400	68800				
I6	9	207	71	91	27	82800	64800	43200	63900				

Screen #	S32
Date	

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pCABk319 **Genset SEQ ID NO 315**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	141	91	72	50	58400	65200	80000	66700	61887.5	29664.8124	na	PBS
B2	9	148	106	68	43	59200	69600	68800	66800				
B3	9	134	65	65	36	53800	52000	57600	53800				
B4	9	91	55	49	22	36400	41600	35200	38700				
B5	9	324	172	151	75	129600	129200	120000	127000				
B6	9	54	31	40	21	21600	24800	33600	28000				
B7	9	80	47	61	14	32000	43200	22400	35200				
B8	9	173	103	99	53	69200	80800	84800	78900				
H1	9	93	54	35	27	37200	35600	43200	37900	26916.6667	16054.2224	0.04262	DNA pCABk 319
H2	9	35	17	13	7	14000	12000	11200	12300				
H3	9	102	45	52	27	40800	38800	43200	40400				
H4	9	0	0	0	0	0	0	0	0				
H5	9	116	58	54	26	46400	44800	41600	44400				
H6	9	69	30	40	14	27600	28000	22400	26500				

Screen #	S34
Date	

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pCACPNM200 **Genset SEQ ID NO 201**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
B1	9	432	231	229	128	172800	184000	204800	186400	141587.5	84314.2253	na	PBS
B2	9	422	210	222	109	168800	172800	174400	172200				
B3	9	129	65	76	42	51600	56400	67200	57900				
B4	9	676	348	424	233	270400	308800	372800	315200				
B5	9	312	149	159	76	124800	123200	121600	123200				
B6	9	130	67	64	36	52000	53600	57600	53600				
B7	9	407	219	207	113	162800	170400	180800	171100				
B8	9	125	76	63	32	50000	55600	51200	53100				
D2	9	129	63	77	36	51600	56000	57600	55300	76180	78030.7734	0.2844	DNA pCACPNM 200
D3	9	550	213	292	172	220000	202000	275200	224800				
D4	9	60	31	37	16	24000	27200	25600	26000				
D5	9	10	4	3	1	4000	2800	1600	2800				
D6	9	182	98	89	41	72800	74800	65600	72000				
D1	9	0	0	0	0	0	0	0	0	omitted from calculations			

Screen #	S38
Date	

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pCAI635 **Genset SEQ ID NO 477**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	365	189	206	108	146000	158000	172800	158700	164537.5	70742.6134	na	PBS
B2	9	640	345	259	137	256000	241600	219200	239600				
B3	9	364	220	229	109	145600	179600	174400	169800				
B4	9	427	175	193	118	170800	147200	188800	163500				
B5	9	271	151	113	77	108400	105600	123200	110700				
B6	9	288	142	109	71	115200	113600	113600	107400				
B7	9	797	391	377	168	318800	307200	268800	300500				
B8	9	177	60	88	47	70800	59200	75200	66100				
I1	9	275	137	157	92	110000	117600	147200	123100	68766.6667	44324.36	0.01998	DNA pCAI 635
I2	9	128	51	86	38	51200	54800	60800	55400				
I3	9	126	68	68	31	50400	54400	49600	52200				
I4	9	304	134	189	98	121600	129200	156800	134200				
I5	9	72	29	57	13	28800	34400	20800	29600				
I6	9	53	25	21	9	21200	18400	14400	18100				

Screen #	S41
Date	

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pCAI638 **Genset SEQ ID NO 472**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
B1	9	577	298	304	137	230800	240800	219200	232900	166287.5	51280.7575	na	PBS
B2	9	419	193	250	94	167600	177200	150400	168100				
B3	9	231	123	157	66	92400	112000	105600	105500				
B4	9	383	218	238	109	153200	182400	174400	173100				
B5	9	178	121	118	61	71200	95600	97600	90000				
B6	9	615	300	309	147	246000	240000	235200	242100				
B7	9	473	219	237	113	189200	182400	180800	183700				
B8	9	289	190	174	83	115600	145600	132800	134900				
D1	9	85	53	46	28	34000	39600	41600	38700	85483.3333	46296.8111	0.0293	DNA pCAI 638
D2	9	210	74	109	47	84000	73200	75200	76400				
D3	9	436	207	221	114	174400	171200	182400	174800				
D4	9	124	63	80	43	49600	57200	68800	58200				
D5	9	292	152	142	62	116800	117600	99200	112800				
D6	9	136	57	65	35	54400	48800	56000	52000				

Screen #	S43
Date	

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pCA60kDa **Genset SEQ ID NO 596**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	500	270	259	135	200000	211600	216000	209800	207962.5	108120.638	na	PBS
B2	9	156	92	86	47	62400	71200	75200	70000				
B3	9	471	283	253	181	188400	214400	289600	226700				
B4	9	445	227	229	108	178000	182400	172800	178900				
B5	9	1045	527	561	255	418000	435200	408000	424100				
B6	9	554	283	333	159	221600	226400	254400	242200				
B7	9	568	287	363	173	227200	260000	276800	256000				
B8	9	134	60	73	40	53600	53200	64000	56000				
J1	9	59	30	47	10	23600	30800	16000	25300	37650	38766.8565	0.002664	DNA pCA CRMP 60 kD
J2	9	104	63	55	31	41600	47200	49600	46400				
J3	9	284	131	165	80	113600	118400	128000	119600				
J4	9	17	8	15	6	6800	9200	9600	8700				
J5	9	46	25	16	7	18400	18400	11200	15600				
J6	9	29	12	15	5	11600	10800	8000	10300				

Screen #	S44
Date	

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pCACPNM882 **Genset SEQ ID NO 880**
pCA60kDa **Genset SEQ ID NO 596**

Highlighted section is excluded from the calculation. Group B values from Screen 43 will be used for Wilcoxon p value calculation. S43 values are in RED.

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs S43 grp B)	Immunized with
												S43 -Grp B	
B1	9	130	77	99	65	52000	70400	104000	74200	142950	38040.6033	values	PBS
B2	9	59	28	32	33	23600	23200	52800	30700			209800	
B3	9	95	44	46	25	38000	36800	40000	37900			70000	
B4	9	39	28	26	14	15600	20800	22400	19900			226700	
B5	9	428	225	223	103	171200	179200	164800	173600			178900	
B6	9	468	220	267	102	187200	176000	163200	185000			424100	
B7	9	282	153	149	82	112800	120800	131200	121400			242200	
B8	9	240	111	122	53	96000	93200	84800	91800			256000	
												58000	
I1	9	47	15	24	14	18800	15600	22400	18100	77500	39880.3628	**0.0293**	DNA pCACPNM 882
I2	9	313	160	167	84	125200	130800	134400	130300				
I3	9	185	81	93	49	74000	69600	78400	72900				
I4	9	125	69	66	35	50000	54000	56000	53500				
I5	9	180	45	100	41	72000	58000	65600	63400				
I6	9	374	143	162	71	149600	122000	113600	126800				
J1	9	105	71	82	29	42000	61200	46400	52700	58516.6667	26695.781	**0.007992**	DNA pCA CRMP 60 kD
J2	9	68	46	59	28	27200	42000	44800	39000				
J3	9	213	139	164	64	85200	121200	102400	107500				
J4	9	34	24	29	19	13600	21200	30400	21600				
J5	9	146	72	91	39	58400	65200	62400	62800				
J6	9	153	65	100	48	61200	66000	78800	67500				

Screen #	S47
Date	

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pCAI396 **Genset SEQ ID NO 28**
pCABk319 **Genset SEQ ID NO 315**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
B1	9	365	183	191	91	146000	149600	145600	147700	325950	294241.414	na	PBS
B2	9	472	225	238	121	188800	185200	193600	188200				
B3	9	578	295	306	156	231200	240400	249600	240400				
B4	9	1009	448	491	232	403600	375600	371200	381500				
B5	9	756	388	389	201	302400	302800	321600	307400				
B6	9	1716	1384	1471	825	686400	1142000	1320000	1072600				
B7	9	374	200	191	93	149600	156400	148800	152800				
B8	9	276	150	143	77	110400	117200	123200	117000				
H1	9	151	53	68	37	60400	48400	59200	54100	98000	51311.0774	**0.007992**	DNA pCAI 396
H2	9	221	93	114	63	88400	82800	100800	88700				
H3	9	160	97	88	35	64000	73200	56000	66600				
H4	9	487	255	236	144	194800	196400	230400	204500				
H5	9	188	57	93	34	75200	60000	54400	62400				
H6	9	305	112	156	69	122000	107200	110400	111700				
I1	9	248	106	127	51	99200	93200	81600	91800	174283.333	128436.384	**0.2284**	DNA pCABK 319
I2	9	851	364	429	186	340400	317200	297600	318100				
I3	9	1039	435	526	219	415600	384400	350400	383700				
I4	9	148	74	81	36	59200	62000	57600	60200				
I5	9	396	131	196	63	158400	130800	100800	130200				
I6	9	167	54	93	39	66800	58800	62400	61700				

Screen #	S49
Date	

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pCA60kDa **Genset SEQ ID NO 596**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs matched group)	Immunized with
C57BL6													
D1	9	365	161	187	64	146000	139200	102400	131700	106520	61662.2218	na	PBS
D2	9	514	257	279	131	205600	214400	209600	211000				
D3	9	258	116	133	56	103200	99600	89600	98000				
D4	9	136	61	74	26	54400	54000	41600	51000				
D5	9	109	49	67	17	43600	46400	27200	40900				
Balb/b													
E1	9	283	135	127	58	113200	104800	92800	103900	188740	75974.0377	na	PBS
E2	9	903	413	403	190	361200	326400	304000	329500				
E3	9	511	236	241	115	204400	190800	184000	192500				
E4	9	397	209	203	105	158800	164800	168000	164100				
E5	9	389	205	193	88	155600	159200	140800	153700				
Balb/c													
F1	9	74	31	39	21	29600	28000	33600	29800	79380	32203.3166	na	PBS
F2	9	198	111	102	53	79200	85200	84800	83600				
F3	9	223	120	109	64	89200	91600	102400	93700				
F4	9	149	84	77	40	59600	64400	64000	63100				
F5	9	329	156	163	75	131600	127600	120000	126700				
C57BL6												**vs group D**	
J1	9	33	11	16	14	13200	10800	22400	14300	56540	47740.7834	**0.3095**	DNA pCA CRMP 60kD
J2	9	336	166	189	101	134400	142000	161600	145000				
J3	9	146	68	79	38	58400	58800	60800	59200				
J4	9	48	12	23	8	19200	14000	12800	15000				
J5	9	150	62	57	26	60000	47600	41600	49200				
Balb/b												**vs group E**	
K2	9	1028	498	513	246	411200	404400	393600	403400	225375	136902.253	**0.9048**	DNA pCA CRMP 60kD
K3	9	253	120	137	63	101200	102800	100800	101900				
K4	9	821	387	401	184	328400	315200	294400	313300				
K5	9	189	112	98	55	75600	84000	88000	82900				
K1	9	0	0	0	0	0	0	0	0	omitted from calculations			
Balb/c												**vs group F**	
L1	9	23	9	22	8	9200	12400	12800	11700	34960	36831.7037	**0.1508**	DNA pCA CRMP 60kD
L2	9	54	24	17	6	21600	16400	9600	16000				
L3	9	83	39	49	22	33200	35200	35200	34700				
L4	9	23	5	11	2	9200	6400	3200	6300				
L5	9	261	125	149	63	104400	109600	100800	106100				

pCA60kDa Genset SEQ ID NO 596

pCAIMOMP + pCA60kDa + pCAI764 + pCAI555a

Screen #	S50
Date	

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Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
B1	9	729	370	363	196	291600	293200	313600	297900	217937.5	103234.453	na	PBS
B2	9	876	451	439	227	350400	356000	363200	356400				
B3	9	523	243	312	151	209200	222000	241600	223700				
B4	9	299	150	159	71	119600	123600	113600	120100				
B5	9	885	459	479	227	354000	375200	363200	366900				
B6	9	271	148	189	86	108400	134800	137600	128900				
B7	9	354	195	223	105	141600	167200	168000	161000				
B8	9	184	120	117	57	73600	94800	91200	88600				
F1	9	442	218	260	108	176800	191200	172800	183000	152100	79111.8617	0.345	DNA pCA CRMP 60
F2	9	136	60	79	24	54400	55600	38400	51000				
F3	9	177	63	99	38	70800	64800	60800	65300				
F4	9	614	278	340	167	245600	247200	267200	251800				
F5	9	253	149	169	79	101200	127200	126400	120500				
F6	9	596	315	320	136	238400	254000	217600	241000				
I1	9	81	39	66	25	32400	42000	40000	39100	35366.6667	15656.2731	0.000666	mixture of DNAs
I2	9	64	26	24	11	25600	20000	17600	20800				MOMP
I3	9	47	17	23	9	18800	16000	14400	16300				CRMP 60
I4	9	67	38	29	16	26800	26800	25600	26500				pCAI 764
I5	9	121	77	59	26	48400	54400	41600	49700				pCAI 555
I6	9	162	80	64	37	64800	57600	59200	59800				

pCAI555a Genset SEQ ID NO 776/775

Screen #	S51
Date	

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exclude B1 from calculations

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
B1	9	0	0	0	0	0	0	0	0	88600	69457.7165	na	PBS
B2	9	54	26	28	5	21600	20800	8000	17800				
B3	9	189	119	83	51	75600	80800	81600	79700				
B4	9	13	7	6	2	5200	5200	3200	4700				
B5	9	524	274	223	120	209600	198800	192000	199800				
B6	9	362	141	181	103	144800	128800	184800	141800				
B7	9	385	180	161	71	154000	136400	113600	135100				
B8	9	123	49	62	17	49200	44400	27200	41300				
F1	9	52	17	22	9	20800	15600	14400	16800	11716.6667	13132.0748	0.01399	DNA pCAI 555a
F2	9	13	1	6	0	5200	2800	0	2700				
F3	9	3	0	2	0	1200	800	0	700				
F4	9	43	17	15	5	17200	12800	8000	12700				
F5	9	0	0	0	0	0	0	0	0				
F6	9	118	47	48	17	47200	38000	27200	37600				

Screen #	S52
Date	

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pCAI314 **Genset SEQ ID NO 291**
pCACPNM882 **Genset SEQ ID NO 880**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	140	75	100	41	56000	70000	65600	65400	124175	109280.946	na	PBS
B2	9	602	299	326	154	240800	250000	246400	246800				
B3	9	158	83	97	31	63200	72000	49600	64200				
B4	9	864	418	463	226	345600	352400	361600	353000				
B5	9	146	68	86	30	58400	61600	48000	57400				
B6	9	318	170	168	75	127200	135200	120000	129400				
B7	9	18	11	8	5	7200	7600	8000	7600				
B8	9	166	87	110	34	66400	78800	54400	69600				
E1	9	1320	610	775	338	528000	554000	540800	544200	204500	214850.816	1.338	DNA pCAI 314
E2	9	965	521	730	294	386000	500400	470400	464300				
E3	9	18	3	0	2	7200	1200	3200	3200				
E4	9	171	54	74	19	68400	51200	30400	50300				
E5	9	206	91	124	43	82400	86000	68800	80800				
E6	9	216	73	166	37	86400	95600	59200	84200				
G1	9	501	177	256	112	200400	173200	179200	181500	385600	256078.907	0.7546	DNA pCACPNM 882
G2	9	1162	497	626	241	464800	449200	385600	437200				
G3	9	604	279	331	123	241600	244000	196800	231600				
G4	9	665	299	398	168	266000	278800	268800	273100				
G5	9	2315	1078	1367	525	926000	978000	840000	930500				
G6	9	675	308	357	148	270000	266000	236800	259700				

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pCAI327 **Genset SEQ ID NO 577**
pCAI632 **Genset SEQ ID NO 480/482**

* -no count-no sample

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	891	422	451	220	356400	349200	352000	351700	402985.714	280185.777	na	PBS
B3	9	944	483	507	268	377600	396000	425600	398800				
B4	9	747	347	411	196	298800	303200	313600	304700				
B5	9	717	329	384	186	286800	285200	297600	288700				
B6	9	507	254	242	129	202800	198400	206400	201500				
B7	9	2796	1393	1378	590	1118400	1108400	944000	1069800				
B8	9	551	254	249	125	220400	201200	200000	205700				
B2	9	*	*	*	*								
E1	9	1577	785	811	416	630800	638400	665600	643300	349533.333	181098.377	0.9452	DNA pCAI 419
E2	9	387	143	197	90	154800	136000	144000	142700				
E3	9	1477	506	698	253	590800	481600	404800	489700				
E4	9	1065	494	*	*	426000	395200		410600				
E5	9	408	180	248	104	163200	171200	166400	166000				
E6	9	627	259	380	131	250800	255600	209600	242900				
F1	9	94	48	47	18	37600	38000	28800	35600	118466.667	68079.9448	0.004662	DNA pCAI 327
F2	9	575	266	284	130	230000	220000	208000	219500				
F3	9	181	74	82	37	72400	62400	59200	64100				
F4	9	158	65	83	39	63200	59200	62400	61000				
F5	9	456	127	224	107	182400	140400	171200	158600				
F6	9	418	144	265	121	167200	163800	193800	172000				
H1	9	1450	660	720	340	580000	552000	544000	557000	243500	144052.19	0.1375	DNA pCAI 632
H2	9	631	229	237	114	252400	186400	182400	201900				
H3	9	394	149	181	71	157600	132000	113600	133800				
H4	9	372	168	176	89	148800	137600	142400	141600				
H5	9	516	249	265	119	206400	205600	190400	202000				
H6	9	649	250	293	128	259600	217200	204800	224700				

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pCACPNM882 **Genset SEQ ID NO 880**
pCA60kDa **Genset SEQ ID NO 596**

* -no count-contaminated well
** -no count-well not stained

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	239	127	107	57	95600	93600	91200	93500	220150	153671.24	na	PBS
B2	9	1580	730	681	376	624000	564400	601600	588600				
B3	9	223	108	101	53	89200	83600	84800	85300				
B4	9	391	194	238	97	156400	172800	155200	164300				
B5	9	329	161	174	93	131600	134000	148800	137100				
B6	9	529	258	261	135	211600	207600	216000	210700				
B7	9	744	333	397	209	297600	292000	334400	304000				
B8	9	469	217	221	108	187600	175200	172800	177700				
I1	9	646	202	297	106	258400	199600	189600	206800	164116.667	69755.846	0.662	DNA pCACPNM 882
I2	9	*	345	321	187	n/a	266400	299200	282800				
I3	9	391	169	189	85	156400	143200	136000	144700				
I4	9	459	182	227	98	183600	183600	156800	166900				
I5	9	169	60	78	31	67600	55200	49600	56900				
I6	9	396	136	165	67	158400	120400	107200	128600				
J1	9	343	190	219	81	137200	163600	129600	148500	158300	72712.8829	0.7546	DNA pCA CRMP 60 kD
J2	9	478	271	221	117	191200	196800	187200	193000				
J3	9	605	333	306	190	242000	255600	304000	264300				
J4	9	465	264	250	136	186000	205600	217600	203700				
J5	9	269	**	207	75	107600	165600	120000	98300				
J6	9	144	**	80	29	57600	64000	46400	42000				

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Date	

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pCAI640 **Genset SEQ ID NO 468**
pCAI115 **Genset SEQ ID NO 305**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs B group)	Immunized with
B1	9	207	124	101	56	82800	90000	89600	88100	221050	151443.372	na	PBS
B2	9	717	414	286	139	286800	280000	222400	267300				
B3	9	217	103	90	49	86800	77200	78400	79900				
B4	9	1373	704	675	329	549200	551600	526400	544700				
B5	9	664	306	371	166	265600	270800	265600	268200				
B6	9	745	450	379	186	298000	331600	297600	314700				
B7	9	260	165	118	56	104000	113200	89600	105000				
B8	9	227	146	127	58	90800	109200	92800	100500				
F1	9	957	432	416	188	382800	339200	300800	340500	302300	193124.131	1.665	DNA pCAI 640
F2	9	2153	915	791	353	861200	682400	564800	697700				
F3	9	601	330	332	159	240400	264800	254400	256100				
F4	9	359	161	189	99	143600	140000	158400	145500				
F5	9	260	140	147	60	104000	114800	96000	107400				
F6	9	702	312	376	147	280800	275200	235200	266800				
G1	9	343	128	155	131	137200	113200	209600	143300	264450	183257.594	1.338	DNA pCAI 638
G2	9	519	245	228	136	207600	189200	217600	200900				
G3	9	1548	886	769	359	619200	662000	574400	629400				
G4	9	177	80	71	35	70800	60400	56000	61900				
G5	9	787	363	506	219	314800	347600	350400	340100				
G6	9	481	213	408	97	192400	248400	155200	211100				
K1	9	223	118	136	66	89200	101600	105600	99500	157066.667	149263.309	0.4136	DNA pCAI 115
K2	9	1088	576	632	323	435200	483200	516800	479600				
K3	9	91	59	50	33	36400	43600	52800	44100				
K4	9	301	200	205	104	120400	162000	166400	152700				
K5	9	291	142	155	78	116400	118800	124800	119700				
K6	9	116	63	57	28	46400	48000	44800	46800				

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Date	

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pCAI635 **Genset SEQ ID NO 477**

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	406	165	180	69	162400	138000	110400	137200	253325	235995.645	na	PBS
B2	9	319	129	129	51	127600	103200	81600	103900				
B3	9	585	284	270	103	234000	221600	164800	210500				
B4	9	600	278	279	105	240000	222800	168000	213400				
B5	9	388	190	199	79	155200	155600	126400	148200				
B6	9	201	102	130	54	80400	92800	86400	88100				
B7	9	2322	915	1069	577	928800	793600	923200	859800				
B8	9	619	334	350	167	247600	273600	267200	265500				
G1	9	277	118	134	72	110800	100800	115200	106900	85766.6667	61578.7211	0.05927	DNA pCACPNM 635
G2	9	386	157	191	75	154400	139200	120000	138200				
G3	9	491	190	230	116	196400	168000	185600	179500				
G4	9	176	62	75	38	70400	54800	60800	60200				
G5	9	19	8	11	8	7600	7600	12800	8900				
G6	9	45	26	26	15	18000	20800	24000	20900				

SUMMARY OF PROTECTIVE RESULTS

Plasmid-ID	Hit Description/Comment	corresponding SEQ ID No from WO99/27105	**PROTECTIVE Yes/No**	Tested in Screens/Group	WILCOXON "p" value (vs SALINE/PBS immunized-group B-on day 9, unless otherwise noted)
pCAI877	pmp1; putative 98 kDa outer membrane protein; CP 036	15	**NO**	S8 -group E	day 5-0.7302
					day 9-0.9048
pCAI397	pmp2; putative 98 kDa outer membrane protein; CP 017	25	**NO**	S3 -group E	day 5-0.5714
					day 9-0.3929
pCAI396	CP 014	28	**YES**	S4 -group F	S4-day 5-1.75
					S4-day 9-1.75
				S47 -group H	S47-0.007992
pCAI395	pmp4; putative 98 kDa outer membrane protein; CP 013	31/32	**NO**	S4 -group E	day 5-0.7857
					day 9-1.214
pCAI394	pmp5; putative 98 kDa outer membrane protein; CP 012	33/35	**NO**	S4 -group D	day 5-0.5714
					day 9-1.429
pCACPNM 200	IncA; inclusion membrane protein	201	**NO**	S34 -group D	0.2844

pCAI314	outer membrane protein; CP 008; Incyte 314	291	**NO**	S2 -group E	S2-day 5-0.7857
					S2-day 9-0.7857
				S52 -group E	S52-1.338
pCAI114	inclusion membrane protein B	304	**NO**	S17 -group D	0.7546
pCAI115	inclusion membrane protein C; CP 011	305	**YES**	S10 -group D	S10-day 5-0.03175
					S10-day 9-0.9048
				S56 -group K	S56-0.4136
pCAI111	outer membrane protein Omp85; CP 015	314	**NO**	S7 -group D	0.7302
pCABk319	OmpH-like outer membrane protein	315	**NO**	S32 -group H	S32-0.04262
				S47 -group I	S47-0.2284
pCAI368	pmp 6; putative 98 kDa outer membrane protein	466	**NO**	S17 -group I	1.655
pCAI640	pmp 7; putative 98 kDa outer membrane protein; CP 032	468	**NO**	S9 -group G	S9-day 5-0.03175
					S9-day 9-0.9048
				S56 -group F	S56-1.665
pCAI639	pmp 8; putative 98 kDa outer membrane protein; CP 031	470	**NO**	S7 -group F	d9 only-0.9048

pCAI638	pmp 9; putative 98 kDa outer membrane protein; CP 030	472	**NO**	S41 -group D	S41-0.0293
				S56 -group G	S56-1.338
pCAI635	pmp 10; putative 98 kDa outer membrane protein; CP 029	477	**NO**	S38 -group I	S38-0.01998
				S57 -group H	S57-0.1812
pCAI634	pmp 11; putative 98 kDa outer membrane protein; CP 028	478	**NO**	S9 -group F	day 5-0.4127
					day 9-1.27
pCAI633	pmp 12; putative 98 kDa outer membrane protein	479	**NO**		
pCAI632	POMP91B precursor	480/482	**NO**	S10 -group G	S10-day 5-0.01587
					S10-day 9-0.5556
				S45 group H	S45-1.655
				S53 -group H	S53-0.1375
pCAI630	POMP91A	485	**NO**	S10 -group F	day 5-0.1111
					day 9-0.4127
pCAI628	putative 98 kDa outer membrane protein; CP 027	500	**NO**	S9 -group E	day 5-0.5556
					day 9-0.25
pCAI626	POMP90B precursor	500/501	**NO**		

pCAI624	putative 98 kDa outer membrane protein	503	**NO**	S21 -group H	0.5728
pCAI622	POMP90B precursor	506	**NO**		
pCAI327	POMP91A	577	**YES**	S18 -group D	S18-0.01265
				S45 -group F	S45-0.4136
				S53 -group F	S53-0.004662
pCAI325	pmp 20; putative 98 kDa outer membrane protein	580	**NO**		
pCAI711	putative outer membrane protein	580	**NO**	S18 -group E	0.2824
pCA60kDa	60kDa CrP; outer membrane protein; CP 004	596	**YES**	S5 -group E	S5-day 5-0.03175
					S5-day 9-0.01587
				S27 -group H	S27-0.001335
				S43 -group J	S43-0.002664
				S44 -group J	S44-vs S43 grp B-0.007992
				S49 -groups J/K/L	S49-J-0.3095
					S49-K-0.9048
					S49-L-0.1508
				S50 -groups F/I	S50-F-0.345
					S50-I-0.000666
				S54 -group J	S54-0.7546

pCAMOMP	major outer membrane protein; in S3-used recombinant CP MOMP; in S20-used CP MOMP ISCOMs	737	**YES**	S1 -group D	S1-day 5-0.3929
					S1-day 9-1.75
				S3 -group F	S3-day 5-0.25
					S3-day 9-0.7857
				S16 -groups D/G/H/F	S16-D-0.2468
					S16-G-0.1775
					S16-H-0.6991
					S16-F-0.1255
				S20 -group H	S20-0.05927
				S27 -group I	S27-0.0293
				S31 -groups D/E/F/G/H/I	S31-D-0.04262
					S31-E-0.001332
					S31-F-0.5728
					S31-G-0.8518
					S31-H-0.1812
					S31-I-1.427
				S50 -groups E/I	S50-E-0.002664
					S50-I-0.000666
pCAI555a	76 kDa protein-alternative reading frame	776/775	**YES**	S51 -group F	0.01399

pCAI419	PilG	876	**NO**	S10 -group E	S10-day 5-0.01587
					S10-day 9-0.1111
				S45 -group E	S45-1.509
				S53 -group E	S53-0.9452
pCACPNM 879	Predicted OMP	877	**NO**	S37 -group E	needed to be retested and never was
pCACPNM 882	Hypothetical protein; sec. locus ORF	880	**NO**	S44 -group I	S44-vs S43 grp B-0.0293
				S52 -group G	S52-0.7546
				S54 -group I	S54-0.662
pCAI473	Unannotated Orf	1035	**YES**	S23 -group I	0.08125
pCA9kDa	9kDa CrP; CP003	597	**NO**	S5 -group D	day 5-0.2857
					day 9-0.1905

SUMMARY OF PROTECTIVE RESULTS

Plasmid-ID	Hit Description/Comment	corresponding SEQ ID No from WO99/27105	**PROTECTIVE Yes/No**	Tested in Screens/Group	WILCOXON "p" value (vs SALINE/PBS immunized-group B-on day 9, unless otherwise noted)
pCAI877	pmp1; putative 98 kDa outer membrane protein; CP 036	15	**NO**	S8 -group E	day 5-0.7302
					day 9-0.9048
pCAI397	pmp2; putative 98 kDa outer membrane protein; CP 017	25	**NO**	S3 -group E	day 5-0.5714
					day 9-0.3929
pCAI396	CP 014	28	**YES**	S4 -group F	S4-day 5-1.75
					S4-day 9-1.75
				S47 -group H	S47-0.007992
pCAI395	pmp4; putative 98 kDa outer membrane protein; CP 013	31/32	**NO**	S4 -group E	day 5-0.7857
					day 9-1.214
pCAI394	pmp5; putative 98 kDa outer membrane protein; CP 012	33/35	**NO**	S4 -group D	day 5-0.5714
					day 9-1.429
pCACPNM 200	IncA; inclusion membrane protein	201	**NO**	S34 -group D	0.2844

pCAI314	outer membrane protein; CP 008; Incyte 314	291	**NO**	S2 -group E	S2-day 5-0.7857
					S2-day 9-0.7857
				S52 -group E	S52-1.338
pCAI114	inclusion membrane protein B	304	**NO**	S17 -group D	0.7546
pCAI115	inclusion membrane protein C; CP 011	305	**YES**	S10 -group D	S10-day 5-0.03175
					S10-day 9-0.9048
				S56 -group K	S56-0.4136
pCAI111	outer membrane protein Omp85; CP 015	314	**NO**	S7 -group D	0.7302
pCABk319	OmpH-like outer membrane protein	315	**NO**	S32 -group H	S32-0.04262
				S47 -group I	S47-0.2284
pCAI368	pmp 6; putative 98 kDa outer membrane protein	466	**NO**	S17 -group I	1.655
pCAI640	pmp 7; putative 98 kDa outer membrane protein; CP 032	468	**NO**	S9 -group G	S9-day 5-0.03175
					S9-day 9-0.9048
				S56 -group F	S56-1.665
pCAI639	pmp 8; putative 98 kDa outer membrane protein; CP 031	470	**NO**	S7 -group F	d9 only-0.9048

pCAI638	pmp 9; putative 98 kDa outer membrane protein; CP 030	472	**NO**	S41 -group D	S41-0.0293
				S56 -group G	S56-1.338
pCAI635	pmp 10; putative 98 kDa outer membrane protein; CP 029	477	**NO**	S38 -group I	S38-0.01998
				S57 -group H	S57-0.1812
pCAI634	pmp 11; putative 98 kDa outer membrane protein; CP 028	478	**NO**	S9 -group F	day 5-0.4127
					day 9-1.27
pCAI633	pmp 12; putative 98 kDa outer membrane protein	479	**NO**		
pCAI632	POMP91B precursor	480/482	**NO**	S10 -group G	S10-day 5-0.01587
					S10-day 9-0.5556
				S45 group H	S45-1.655
				S53 -group H	S53-0.1375
pCAI630	POMP91A	485	**NO**	S10 -group F	day 5-0.1111
					day 9-0.4127
pCAI628	putative 98 kDa outer membrane protein; CP 027	500	**NO**	S9 -group E	day 5-0.5556
					day 9-0.25
pCAI626	POMP90B precursor	500/501	**NO**		

pCAI624	putative 98 kDa outer membrane protein	503	**NO**	S21 -group H	0.5728
pCAI622	POMP90B precursor	506	**NO**		
pCAI327	POMP91A	577	**YES**	S18 -group D	S18-0.01265
				S45 -group F	S45-0.4136
				S53 -group F	S53-0.004662
pCAI325	pmp 20; putative 98 kDa outer membrane protein	580	**NO**		
pCAI711	putative outer membrane protein	580	**NO**	S18 -group E	0.2824
pCA60kDa	60kDa CrP; outer membrane protein; CP 004	596	**YES**	S5 -group E	S5-day 5-0.03175
					S5-day 9-0.01587
				S27 -group H	S27-0.001335
				S43 -group J	S43-0.002664
				S44 -group J	S44-vs S43 grp B-0.007992
				S49 -groups J/K/L	S49-J-0.3095
					S49-K-0.9048
					S49-L-0.1508
				S50 -groups F/I	S50-F-0.345
					S50-I-0.000666
				S54 -group J	S54-0.7546

pCAMOMP	major outer membrane protein; in S3-used recombinant CP MOMP; in S20-used CP MOMP ISCOMs	737	**YES**	S1 -group D	S1-day 5-0.3929
					S1-day 9-1.75
				S3 -group F	S3-day 5-0.25
					S3-day 9-0.7857
				S16 -groups D/G/H/F	S16-D-0.2468
					S16-G-0.1775
					S16-H-0.6991
					S16-F-0.1255
				S20 -group H	S20-0.05927
				S27 -group I	S27-0.0293
				S31 -groups D/E/F/G/H/I	S31-D-0.04262
					S31-E-0.001332
					S31-F-0.5728
					S31-G-0.8518
					S31-H-0.1812
					S31-I-1.427
				S50 -groups E/I	S50-E-0.002664
					S50-I-0.000666
pCAI555a	76 kDa protein-alternative reading frame	776/775	**YES**	S51 -group F	0.01399

pCAI419	PilG	876	**NO**	S10 -group E	S10-day 5-0.01587
					S10-day 9-0.1111
				S45 -group E	S45-1.509
				S53 -group E	S53-0.9452
pCACPNM 879	Predicted OMP	877	**NO**	S37 -group E	needed to be retested and never was
pCACPNM 882	Hypothetical protein; sec. locus ORF	880	**NO**	S44 -group I	S44-vs S43 grp B-0.0293
				S52 -group G	S52-0.7546
				S54 -group I	S54-0.662
pCAI473	Unannotated Orf	1035	**YES**	S23 -group I	0.08125
pCA9kDa	9kDa CrP; CP003	597	**NO**	S5 -group D	day 5-0.2857
					day 9-0.1905

SUMMARY OF PROTECTIVE RESULTS

Plasmid-ID	Hit Description/Comment	corresponding SEQ ID No from WO99/27105	**PROTECTIVE Yes/No**	Tested in Screens/Group	WILCOXON "p" value (vs SALINE/PBS immunized-group B-on day 9, unless otherwise noted)
pCAI877	pmp1; putative 98 kDa outer membrane protein; CP 036	15	**NO**	S8 -group E	day 5-0.7302
					day 9-0.9048
pCAI397	pmp2; putative 98 kDa outer membrane protein; CP 017	25	**NO**	S3 -group E	day 5-0.5714
					day 9-0.3929
pCAI396	CP 014	28	**YES**	S4 -group F	S4-day 5-1.75
					S4-day 9-1.75
				S47 -group H	S47-0.007992
pCAI395	pmp4; putative 98 kDa outer membrane protein; CP 013	31/32	**NO**	S4 -group E	day 5-0.7857
					day 9-1.214
pCAI394	pmp5; putative 98 kDa outer membrane protein; CP 012	33/35	**NO**	S4 -group D	day 5-0.5714
					day 9-1.429
pCACPNM 200	IncA; inclusion membrane protein	201	**NO**	S34 -group D	0.2844

pCAI314	outer membrane protein; CP 008; Incyte 314	291	**NO**	S2 -group E	S2-day 5-0.7857
					S2-day 9-0.7857
				S52 -group E	S52-1.338
pCAI114	inclusion membrane protein B	304	**NO**	S17 -group D	0.7546
pCAI115	inclusion membrane protein C; CP 011	305	**YES**	S10 -group D	S10-day 5-0.03175
					S10-day 9-0.9048
				S56 -group K	S56-0.4136
pCAI111	outer membrane protein Omp85; CP 015	314	**NO**	S7 -group D	0.7302
pCABk319	OmpH-like outer membrane protein	315	**NO**	S32 -group H	S32-0.04262
				S47 -group I	S47-0.2284
pCAI368	pmp 6; putative 98 kDa outer membrane protein	466	**NO**	S17 -group I	1.655
pCAI640	pmp 7; putative 98 kDa outer membrane protein; CP 032	468	**NO**	S9 -group G	S9-day 5-0.03175
					S9-day 9-0.9048
				S56 -group F	S56-1.665
pCAI639	pmp 8; putative 98 kDa outer membrane protein; CP 031	470	**NO**	S7 -group F	d9 only-0.9048

pCAI638	pmp 9; putative 98 kDa outer membrane protein; CP 030	472	**NO**	S41 -group D	S41-0.0293
				S56 -group G	S56-1.338
pCAI635	pmp 10; putative 98 kDa outer membrane protein; CP 029	477	**NO**	S38 -group I	S38-0.01998
				S57 -group H	S57-0.1812
pCAI634	pmp 11; putative 98 kDa outer membrane protein; CP 028	478	**NO**	S9 -group F	day 5-0.4127
					day 9-1.27
pCAI633	pmp 12; putative 98 kDa outer membrane protein	479	**NO**		
pCAI632	POMP91B precursor	480/482	**NO**	S10 -group G	S10-day 5-0.01587
					S10-day 9-0.5556
				S45 group H	S45-1.655
				S53 -group H	S53-0.1375
pCAI630	POMP91A	485	**NO**	S10 -group F	day 5-0.1111
					day 9-0.4127
pCAI628	putative 98 kDa outer membrane protein; CP 027	500	**NO**	S9 -group E	day 5-0.5556
					day 9-0.25
pCAI626	POMP90B precursor	500/501	**NO**		

pCAI624	putative 98 kDa outer membrane protein	503	**NO**	S21 -group H	0.5728
pCAI622	POMP90B precursor	506	**NO**		
pCAI327	POMP91A	577	**YES**	S18 -group D	S18-0.01265
				S45 -group F	S45-0.4136
				S53 -group F	S53-0.004662
pCAI325	pmp 20; putative 98 kDa outer membrane protein	580	**NO**		
pCAI711	putative outer membrane protein	580	**NO**	S18 -group E	0.2824
pCA60kDa	60kDa CrP; outer membrane protein; CP 004	596	**YES**	S5 -group E	S5-day 5-0.03175
					S5-day 9-0.01587
				S27 -group H	S27-0.001335
				S43 -group J	S43-0.002664
				S44 -group J	S44-vs S43 grp B-0.007992
				S49 -groups J/K/L	S49-J-0.3095
					S49-K-0.9048
					S49-L-0.1508
				S50 -groups F/I	S50-F-0.345
					S50-I-0.000666
				S54 -group J	S54-0.7546

pCAMOMP	major outer membrane protein; in S3-used recombinant CP MOMP; in S20-used CP MOMP ISCOMs	737	**YES**	S1 -group D	S1-day 5-0.3929
					S1-day 9-1.75
				S3 -group F	S3-day 5-0.25
					S3-day 9-0.7857
				S16 -groups D/G/H/F	S16-D-0.2468
					S16-G-0.1775
					S16-H-0.6991
					S16-F-0.1255
				S20 -group H	S20-0.05927
				S27 -group I	S27-0.0293
				S31 -groups D/E/F/G/H/I	S31-D-0.04262
					S31-E-0.001332
					S31-F-0.5728
					S31-G-0.8518
					S31-H-0.1812
					S31-I-1.427
				S50 -groups E/I	S50-E-0.002664
					S50-I-0.000666
pCAI555a	76 kDa protein-alternative reading frame	776/775	**YES**	S51 -group F	0.01399

pCAI419	PilG	876	**NO**	S10 -group E	S10-day 5-0.01587
					S10-day 9-0.1111
				S45 -group E	S45-1.509
				S53 -group E	S53-0.9452
pCACPNM 879	Predicted OMP	877	**NO**	S37 -group E	needed to be retested and never was
pCACPNM 882	Hypothetical protein; sec. locus ORF	880	**NO**	S44 -group I	S44-vs S43 grp B-0.0293
				S52 -group G	S52-0.7546
				S54 -group I	S54-0.662
pCAI473	Unannotated Orf	1035	**YES**	S23 -group I	0.08125
pCA9kDa	9kDa CrP; CP003	597	**NO**	S5 -group D	day 5-0.2857
					day 9-0.1905